

ABSTRACT

The present invention relates to a combined regeneration cooling and heating system capable of enhancing a heat exchange efficiency based on a heat exchange between a high temperature refrigerant flowing in the interior of an expansion unit and a low temperature refrigerant flowing in the outside. A compressor for compressing refrigerant to a high temperature and pressure state, an indoor unit installed in the indoor for cooling an indoor air by heat-exchanging a low temperature expanded refrigerant with an indoor air in the cooling mode and for heating an indoor air by heat-exchanging a high temperature and pressure refrigerant with an indoor air in the heating mode, an outdoor unit installed in the outdoor for discharging heat into the air by heat-exchanging a high temperature and pressure refrigerant with an external air in the cooling mode and for heating a refrigerant by heat-exchanging the expanded refrigerant with an external air in the heating mode, and a heat exchange unit in which a heat exchanger in which a high temperature refrigerant discharged from the indoor unit flows and the expansion unit adapted to receive a refrigerant of the heat exchanger and to expand the same.